✓WORK PLAN SUPPLEMENT

MANVILLE FORMER WASTE DISPOSAL AREA

WAUKEGAN, ILLINOIS

April 27, 1989

TABLE OF CONTENTS

1.0 INTRODUCTION

On December 31, 1987, Manville Sales Corporation (Manville), entered into a Consent Decree with the United States Environmental Protection Agency (USEPA) for the remediation of a former waste disposal area located in Waukegan, Illinois. Pursuant to the Consent Decree, a remedial Work Plan and construction plans and specifications were prepared by Manville and submitted to the USEPA. USEPA approved the initial work plan and drawings on October 17, 1988. Two revisions to the original submissions, denoted Revisions B and B', were approved for field implementation by USEPA on October 21, 1988.

Field implementation of the approved remedial work plan commenced on October 21, 1988. During the course of the associated construction activities, certain disputes arose between the USEPA on-scene coordinator and Manville concerning the proper execution of the work based on each parties interpretation of the construction plans and specifications. On or about January 11, 1989 USEPA ordered Manville to cease construction activities.

The areas of dispute which led to cessation of remedial construction activities centered primarily on implementation of the visible emission standard and the approach to implementing the intent of specifications and drawings.

After considerable discussion between the parties, USEPA approved a redefinition of the visible emission standard on December 14,

1988; Manville subsequently recommenced construction activities on the same day. Nonetheless, disputes continue to arise in regard to execution of the work which jeopardize the completion of construction by May 31, 1990 as stipulated in the Consent Decree.

To minimize the potential of disagreements occurring in the future in regards to the proper execution of the work and to allow the work to proceed in a timely and efficient manner, the report presented hereafter has been prepared to clarify and amplify the project specifications and plans in selected areas of the work. Following approval by USEPA, this document will guide the completion of the remedial action at the Manville Site. It shall be a supplement to the (Amended) Remedial Work Plan and will take precedence over the existing construction plans and specifications in areas where conflicts are present.

2.0 PROJECT MANAGEMENT

USEPA has full authority for ensuring that remedial construction undertaken by Manville conforms to the Remedial Design and is performed in a manner which prevents adverse impact to on-site workers, the general public and the environment. The on-scene coordinator (OSC) is the responsible USEPA representative for the site. The OSC has assigned on-site representatives to act for him on a day-to-day basis.

Manville has retained Conestoga-Rovers & Associates (CRA) to manage the Remedial Action implementation for the Site. CRA's Project Manager (PM) is Mr. Richard G. Shepherd. CRA shall assign an on-site representative (OSR) who shall be present at the Site on a full time basis and who is responsible for the day-to-day remedial implementation program. CRA shall report to Manville senior management.

The remedial contractor retained by Manville shall report to and receive direction in the proper execution of the work from the OSR or PM. All USEPA concerns shall be directed only to the OSR by the OSC or his on-site representative. The OSR shall take the necessary actions to resolve such concerns including directing the contractor to revise or alter construction techniques.

The OSC's on-site representative and the OSR shall meet daily to discuss, review and resolve issues involving project schedules, construction related problems and general work-related issues. On at least a weekly basis and as dictated by project requirements, the OSC, the PM and

their respective site representatives shall meet and review the project and resolve work related issues not resolved mutually by the respective on-site representatives. Such meetings shall address anticipated future work-related issues. It is anticipated that the large majority of construction related problems will be resolved at the field level. Problem resolution shall be documented in minutes of the weekly meetings which shall be prepared and distributed to all attendees.

In the event that it is necessary or desirable to make major alteration or revision to any detail or protocol specified by the construction plans or specifications, or this report, such proposed change will be provided in writing by the PM or OSC to the other party. Revisions or alterations will not be effective until agreement is reached in writing from both Manville and USEPA.

3.0 VISIBLE EMISSIONS

Larry + John amended this

The primary goal of the preparatory efforts specified in this section shall be to prevent visible emissions and all field efforts shall be directed toward this goal. Visible emissions shall be defined as currently specified in 40 CFR 61.141 including the definition of "particulate asbestos material". Particles which rapidly and visibly settle back to the ground surface following disturbance ~~or are of such a size that suspension is not possible~~ shall not be considered visible emissions.

Manville shall control and minimize the generation of visible emissions by implementation of engineering controls. The preferred and primary engineering control shall be application of water. All waste areas to be graded will be prewetted with water prior to disturbance. Prewetting shall, to the degree practicable, penetrate the full depth of proposed material disturbance. Water application rates shall be monitored to avoid excessive wetting of the material being disturbed. As and if required during material grading operations, water misting systems shall be used in the area of work to assist in control of visible emissions. Misting systems shall be capable of applying a fine airborne aqueous mist evenly and consistently over the area of material handling without excessive wetting of waste materials. If wind or other conditions render misting systems or other emission suppression techniques ineffective, Manville shall cease work until selected emission control techniques are capable of effectively controlling visible emissions.

The movement of waste materials to achieve final rough grade contours shall be conducted using the following specific measures :

i) A dozer will be used to cut and move material in preference to a backhoe where use of blade equipment is appropriate. Where movement by dozer results in degradation of material stability, material shall be graded and moved by front end loader.

ii) Where waste material is moved by backhoe or loader, the material will be deposited in its new location from the lowest bucket elevation possible. Dumping of material with the bucket raised will not be allowed.

iii) Work areas brought to final rough grade contours will receive sand cover within one day after completion of rough grading operations or as soon thereafter as practicable.

iv) An operational water truck shall be present and utilized as required at all times when material is being moved or graded.

v) As necessary, application of water to control potential visible emissions shall be performed on areas where rough grading has been completed but sand cover has not been applied.

vi) All Site Roadways ✓shall have potential visible emissions controlled by the application of water or other dust suppressant media until initial sand cover is applied.✓

vii) When material is being moved on steep slopes to achieve final rough grading contours, operations shall be conducted, where possible, on the leeward side of the embankment.

OK assume this is to exclude sand

viii) Trucking of contaminated ~~cut~~ materials will be minimized to the degree possible.

cut from the site

It is anticipated that conditions may occur in the future for which the primary control techniques above are not effective. In such event, additional reasonable engineering controls will be considered and implemented as agreed in the field.

4.0 SITE GRADING

Site grading shall be performed in a manner which will result in final cover contours which comply with the following topographic criteria:

- maximum slope of 2 horizontal to 1 vertical
- minimum slope of 0.20 percent
- positive drainage at all points (ie. a smooth final surface with no bird baths)

Grading guidelines to be followed, where applicable, are as follows:

i) In areas where trees previously have been cut, remaining stumps shall be cut off as close to the ground as possible to facilitate grading and placement of sand cover. Residual stumpage and root systems shall remain in place to assist in stabilizing waste/soil material.

ii) Prior to rough grading and placement of sand, all waste areas shall be tracked over by a bulldozer or similar equipment to provide initial compaction of the waste material and to identify areas of settlement.

iii) For areas of the Site absent steep slopes, sand fill will be used to achieve base final grade contours where surface elevations at points within 25 feet horizontal distance vary by less than two feet in vertical elevation. Where surface elevations vary by more than two feet at

points within a 25 foot horizontal distance, cutting and grading of surface material will be performed to the extent necessary to obtain a smooth free-draining contained base surface that will facilitate long term maintenance of the final cover ("25 foot/2 foot rule").

iv) On slopes where vegetative cover will be established, final cover grade will be established at a slope lying between 2:1 and 2.5:1.

v) Verification of final cover component depths during placement will be undertaken at location intervals and on a frequency as determined appropriate in the field by the OSR and OSC site representative. The requirement for a 50-foot surveyed grid for depth verification purposes during cover construction will no longer be applicable.

Manville will provide USEPA with a set of final as-built topographical plans of the finished cover. These plans will be developed from a permanent field base line or coordinate system such that discrete points on the cover can be field established in the future.

Specific areas of the site will be treated in the following manner:

i) The Papermill Effluent Stage 1 Trough will be partially filled with sand and will function as a surface water drain in the future. The proposed subsurface drainage piping adjacent to the trough shall be deleted. Exposed banks of the trough shall receive rip rap protection consistent with rip rap details shown on the construction drawings with the

exception that the rip-rap base notch will not be cut into waste material where and if it exists.

ii) Perimeter slopes on the north, northwest and southwest which are constructed primarily of pipe, shingles and other solid product waste will be brought to final rough grade with imported sand fill. Portions of these slopes, if any, that are comprised primarily of sludges may, at Manville's option, be brought to final rough grade by using material cut from the top of the slope to construct the lower toe portions of the slope (crest cut/toe fill). Whenever possible, waste material movement on these slopes shall be accomplished using a Gradall excavator.

iii) The requirement for a surface water collection swale of the size and configuration detailed on the project drawings around the entire perimeter of the Site will be reviewed by Manville. If and where confirmed to be required, Manville will provide USEPA with protocols for handling, movement and ultimate disposal of excavated materials resulting from swale construction.

iv) Roadways adjacent to all waterways and between abandoned flexboard basins and ponds will remain at existing grade prior to final cover construction.

Construction of new side slopes into waterways which will remain in service will be initiated from the edge of the new roadway rather than from the edge of existing dike material. Materials excavated from the

upper portions of existing dike to achieve impoundment slopes and the notch into which rip rap will be set, will be used to construct the lower portions of these slopes near the base of the impoundments at the nearest location that fill is required. Where cut dike material is not sufficient to complete impoundment slopes, imported sand will be used to bring the slopes to final grade.

v) The north-east corner of the site ("north-east mound") will be brought to final rough grade with imported sand fill. To the extent that it is available, sand obtained from the bottom of the industrial canal will be used to construct the westerly slope adjacent to the canal.

vi) The east and south banks of the collection basin will be covered with sand and clay without final vegetation following existing ground contours. Prior to placement of sand, all brush will be cut and removed but not grubbed. All trees, root systems of brush and low lying vegetation (grass) will remain in place to aid in bank stabilization.

The west bank of the collection basin will be brought to final grade with imported sand and clay to the waters edge. No vegetation will be established.

The north slope of the collection basin will be brought to final rough grade by a crest cut and toe fill operation and the "25 foot/2 foot rule". Sand and clay will then be placed with no vegetation established.

vii) The steep northerly slope of the west waste pile will be graded to achieve a 2.5:1 final slope. Excess cut material to the extent it is available will be used to fill the drainage basin and the intervening slope. Additional required fill will be provided by imported sand.

The steep east slope will be brought to final grade by a crest cut and toe fill operation.

The remainder of the west waste pile area will be graded in accordance with the ✓"25 foot/2 foot rule" guidance described above.

viii) The "paper mill trough flats" will be brought to final rough-grade contours with sand.

ix) The "U" shaped pond, previously designated as a future plant disposal area, will now be abandoned, filled with imported sand,✓ and the final cover constructed in a similar fashion to the remainder of the Site.

x) The area of miscellaneous disposal in the southwest corner of the Site will be graded to free-draining base contours with imported sand prior to receiving final cover. Wood and other debris in this area shall be compacted by dozer tracking prior to placement of sand cover.

xi) The north and south slopes of the asbestos disposal pit will be brought to a 2.5:1 final rough grade slope by a crest cut and toe fill operation. Surface preparation of the east slope shall be completed consistent with the "25 foot/2 foot rule".

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xii) The majority of the asbestos disposal pit shall be covered with sand and clay by June 1989. A portion of the asbestos disposal pit suitable for the disposal of decontamination waters shall remain open until no longer needed, at which time clay and sand installation shall be completed and topsoil and vegetation established over the entire pit. This provision is not inconsistent with any provision of the Consent Decree or Work Plan.

xiii) The south and southeast border and south-central areas will be rough graded in accordance with the ✓"25 foot/2 foot rule" detailed above. Tree stumps will be cut off near the ground surface but root systems left in place to assist in bank stabilization. Concrete rubble will be carefully relocated to fill low areas on the slope. The overhanging lip on the crest of the south border slope will be cut back and materials deposited on the slope to achieve smooth, free draining contours.

Xiv) Presently, it is proposed that the south slope of the settling basin will be cut or filled with sand, as appropriate, to a 2:1 slope ~~with~~ cut material placed in the adjacent sludge disposal pit. Manville will be currently reevaluating this difficult area and may propose other options to USEPA in the future for approval.

5.0 DIKE SEEPAGE COLLECTION DRAIN

Plan C-8 of the construction drawings indicates a seepage collection drain to be installed immediately below the final clay soil cover on the north slope of the north dike of the Settling Basin. The purpose of this drain was to intercept and collect seepage which flowed through the Settling Basin dike wall.

The north slope north of the Settling Basin will be constructed to base final cover grade with imported clean sand fill. The hydraulic conductivity of the fill is such that seepage through the north dike will flow vertically downward in the immediate vicinity of the dike wall with little horizontal movement through the fill.

The dike seepage collection drain as designed will be ineffective in collecting seepage and therefore, Manville proposes that it be deleted and a toe drain be substituted in its place at the base of the dike wall.

6.0 MISCELLANEOUS WASTE DISPOSAL AND SLUDGE DISPOSAL PITS

Manville shall cover both the miscellaneous waste disposal and sludge disposal pits with a cover comprised of permeable materials of a thickness having an equivalent frost penetration resistance as that provided by the Site cover specified in the Consent Decree ~~and An alternative cover of a thickness agreeable to EPA and taking into account the future disposal priorities of the Manville Plant and IEPA requirements shall be installed~~ by May 31, 1990. The schedule for construction of this cover and the materials that comprise it will be proposed to EPA for approval in a subsequent submission.

OK except "interim" deleted

7.0 COMPLETION OF REMEDIAL CONSTRUCTION

All remedial construction including placement of topsoil and provision of seeding and mulch shall be completed by May 31, 1990. Following this date, long-term maintenance and monitoring of the Site shall commence. Cutting of the vegetative cover, as part of the maintenance program, shall be performed during the spring and summer of 1990 at a frequency dependent on growing conditions through this period. Three cuttings of the vegetative cover, in accordance with Section 02200 Part 3M, Attachment B to the Work Plan, shall be completed prior to the issuance by USEPA of a Certificate of Completion.